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M15D – Technical Specifications

The HiRes Video Company MOBOTIX

MOBOTIX M15D
AllroundDual Camera

Dual. Modular. Unique.

True to the original: The weatherproof, robust successor to our successful MOBOTIX dual camera features interchangeable sensor modules as well as the latest MOBOTIX system technology. The result is a product completely unrivaled in terms of performance, functionality and design.

- Weatherproof dual camera platform for two separately selectable 5MP sensor modules
- Image angle from telephoto lens to hemispheric (13° to 180°)
- Day and night sensor module can be used simultaneously in the camera
- Integrated DVR (up to 64 GB), weeks of recording without network load
- Robust, low-maintenance and weatherproof from -30 to +60 °C (-22 to +140 °F) (IP 66)
- Digital, continuous zooming, panning, tilting
- Microphone, speaker and intelligent movement sensors (MxActivitySensor)

Technical specifications subject to change without notice

MOBOTIX Advantages

Extremley high-sensitive 5-megapixel sensors • All relevant events are automatically saved • Highly secure as motion sensors detect even the smallest movements and reduce the number of false alarms • Cost-effective as fewer cameras are needed thanks to HiRes panorama view • Maintenance-free with no heaters, fans or moving parts • Can be expanded thanks to encrypted two-wire bus (MxBus) • Synchronization via GPS satellite means data available in real time • Weatherproof from -30°C to 60°C (-22°F to 140°F) • No licensing or software fees, free-of-charge updates

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Camera Housing

- AllroundDual Core-Sec equipped with individual sensor modules (L12, L25, L38, L51, L76, L160) for day and night operation
- Robust and low maintenance with no moving parts
- Suitable for wall or ceiling mounting

Accessories

Pole mount

- 3 mm powder-coated stainless steel
- 2 stainless steel straps for pole diameters from 6 to 18 cm, incl. mounting parts

MX-Overvoltage-Protection-Box-LSA/-RJ45

- Weatherproof network connector
- Surge protection up to 4,000 V
- For connecting a network via patch cable or standard network cable

ExtIO function expansion

- Microphone/Speaker
- Infrared motion sensor, temperature sensor
- 2 signal inputs, 2 signal outputs, 2 illuminated keys

LPF sensor module

- LPF (long pass filter) special lens available for all night sensor modules, utilization in combination with IR illumination
- Basis for optimal license plate recognition

Polarization filter

- For all non-hemispheric sensor modules
- Reduces reflections on glass surfaces
- For instance for identifying the driver of a car/ truck (behind the windshield)

5-Megapixel Sensor (5MP)

Even fast-moving objects such as this pigeon can be identified easily without any motion blur. When the light intensity fades, e.g., during dusk, the MOBOTIX Lowlight Exposure Optimization (MxLEO) shortens exposure times to deliver crisp images.

Technical Data

Model versions	Sec (all combinations of 5MP day and night sensor modules possible, including LPF)
Lens options	12 to 160 mm format, horizontal angle 180° to 13°
Sensitivity	Color sensor: 0.25 lux at 1/60 s, 0.013 lux at 1 s B/W sensor: 0.05 lux at 1/60 s, 0.0025 lux at 1 s MxLEO – Lowlight Exposure Optimization
Image sensors	1/2.5" CMOS, 5 megapixels, progressive scan
Max. image size (per sensor)	Color: 2048 x 1536 (QXGA), B/W: 2048 x 1536 (QXGA)
Image formats (per sensor)	Freely selectable image format (160 x 120 up to 2048 x 1536); PTZ views: Surround (Quad), fisheye full image, normal, panorama, double panorama, panorama focus (3 views)
Max. frame rate M-JPEG (live/ recording)	VGA: 30 fps, MEGA/HD: 10 fps, QXGA: 4 fps, 6MEGA: 2 fps
Max. video rate MxPEG (live/ recording/sound)	VGA: 30 fps, MEGA/HD: 30 fps, QXGA: 20 fps, 6MEGA: 8 fps
Image compression	MxPEG, M-JPEG, JPEG, H.264 (SIP video only)
Internal DVR	MicroSD Slot (recording inside the camera, up to 64 GB; 4-GB card preinstalled)
External storage	Directly on NAS and computer/server without additional recording software
Software (free of charge)	MxEasy video management software, MxControlCenter control center software, MOBOTIX App for iOS devices iOS 5.0 and higher
Image processing	Backlight compensation, automatic white balance, image distortion correction (incl. panorama image correction), motion detection, MxActivitySensor
Virtual PTZ (vPTZ)	Digital pan/tilt/zoom, continuous 8x zoom, full image recording in the background
Alarm/events	Video motion sensor, MxActivitySensor, external signals, temperature sensor, PIR, microphone, shock detector, notification via e-mail, FTP, IP telephony (VoIP, SIP), visual/acoustic alarm, pre- and post-alarm images
Audio	Integrated microphone & speaker, lip-synchronous audio, intercom, sound recording
Interfaces	Ethernet 10/100, IPv4/IPv6, MiniUSB, MxBus; IO and RS232 via MX-232-IO-Box (accessory)
Video telephony	VoIP/SIP, intercom, remote controlling with key code, event notification
Security	User/group management, HTTPS/SSL, IP address filter, IEEE 802.1x, intrusion detection, digital image signature
Certifications	EMC (EN 55022, CISPR 22, EN 55024, EN 61000-6-1/2,FCC part 15B, CFR 47, AS/NZS 3548)
Power supply	Power over Ethernet (PoE in accordance with IEEE802.3af): PoE class variable (2/3) depending on operating mode; power consumption: typ. 4.5 or 5 watts (for 1 or 2 sensor modules)
Operating conditions	IP66, -30°C to +60°C (-22°F to +140°F)
Dimensions	W x H x D with wall mount: 15.8 x 24.4 x 23.9 cm W x H x D with ceiling mount: 15.8 x 21.0 x 20.7 cm
Weight (without sensor modules)	with wall mount: approx. 1,129 g with ceiling mount: about 1,078 g

For more information on the entire range of MOBOTIX accessories and additional information on the M15D, such as prices, manuals, video management software for computers and iOS devices, etc., please go to **www.mobotix.com > Products**. Or - if you would like to talk to us on the phone to get advice with our products, please call +49 06302 9816-103.

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Camera Model	M15D-Sec
Lenses, Sensors	
Hemispheric 12 mm (180° x 160°)	L12
Super Wide-Angle 25 mm (82° x 61°)	L25
Wide-Angle 38 mm (55° x 41°)	L38
Wide-Angle 51 mm (40° x 30°)	L51
Tele 76 mm (27° x 20°)	L76
Tele 160 mm (13° x 10°)	L160
Tele 320 mm (7° x 5°)	–
CSVario 28 – 63 mm (28° – 58°)	–
Image sensor with individual exposure zones (B/W sensor modules also available with integrated Long Pass Filter)	Color, B/W (any combination)
Sensor sensitivity in lux at 1/60 s /1 s	Color: 0,25/0,013 B/W: 0,005/0,0025
Image sensor resolution (each color or B/W sensor)	5 MP (2592 x 1944)

Hardware Functions	
Protection class	IP66
Temperature range -30 to +60°C/-22 to +140°F	•
Temporary internal DVR	64 MB
Internal DVR, ex works (max. 64 GB)	4 GB (MicroSD)
Microphone/speaker	•/•
Passive infrared sensor (PIR)	•
Integrated temperature sensor	•
Shock detector	•
Power consumption (typical) with one/two sensor module(s)	< 4,5 watts/< 5 watts
Variable PoE class (factory default: 2)	2 or 3

Image Formats, Frame Rates, Image Storage	
Maximum image format (per sensor)	QXGA (2048 x 1536)
Maximum frame rate (MxPEG, max. resolution)	20 fps (QXGA)
CIF images with 4 GB MicroSD DVR	250,000
VGA images with 4 GB MicroSD DVR	125,000
HD images with 4 GB MicroSD DVR	40,000
QXGA images with 4 GB MicroSD DVR	20,000

- • available ex works
- – not available

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Camera Model	M15D-Sec
General Funcrions	
Digital zoom (continous) with panning	•
Codecs: Motion-JPEG/MxPEG/H.264 for SIP	•/•/•
Programmable exposure zones	•
Snapshot recording (pre/post-alarm images)	50
Terabyte ring buffer storage (internal/network)	•
Continous recording with sound (0.2 to 30 fps)	•
Event recording with sound	•
Time and event control/flexible event logic	•/•
Weekly schedules/holidays	•
Web functionality (FTP, email)	•
Playback/QuadView and MultiView	•/•
Bidirectional sound in browser	•
Logo generator, animated	•
Master/Slave arming	•
Several scheduled privacy zones	•
Customized voice messages	•
VoIP telephony (audio/video, alert)	•
Remote alarm notification (network message)	•
Signal inputs/outputs and RS232 via	MX-232-IO-Box
Programming interface (HTTP API)	•
Security Features (HTTPS/SL, IP-based access control, IEEE 802.1X network authentification)	•

Video Analysis	
Video motion detector	•
MxAnalytics	–
MxActivitySensor	•

Video Management Software	
MxEasy (Windows/Mac OS X)	•
MxControlCenter (Windows)	•
MOBOTIX App (iOS)	•

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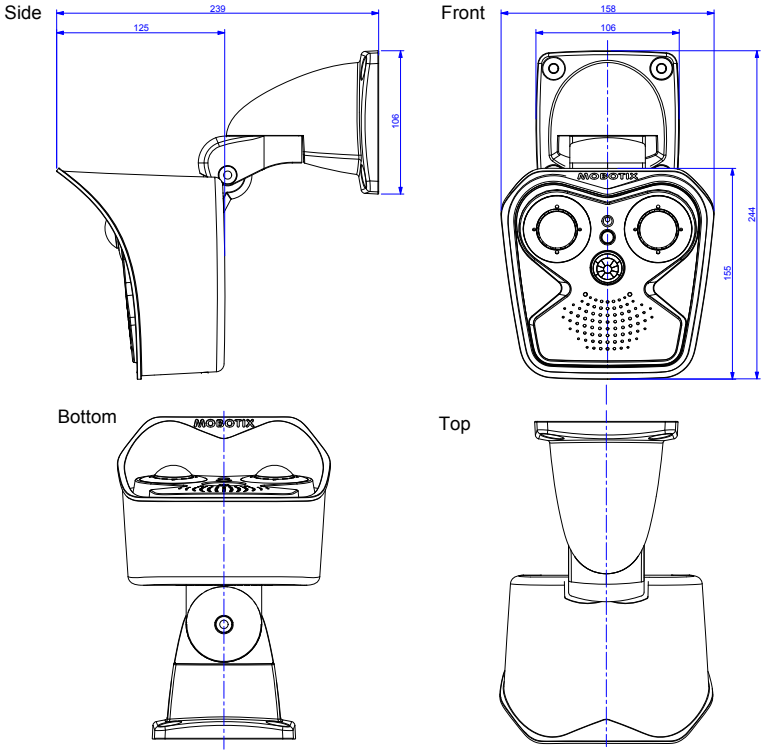
Delivered Parts M15M Core (Basic Module)

(Excerpt from the technical documentation: www.mobotix.com > Support > Manuals)



(Excerpt from technical drawings and 3D views: www.mobotix.com > Support > Image Database)

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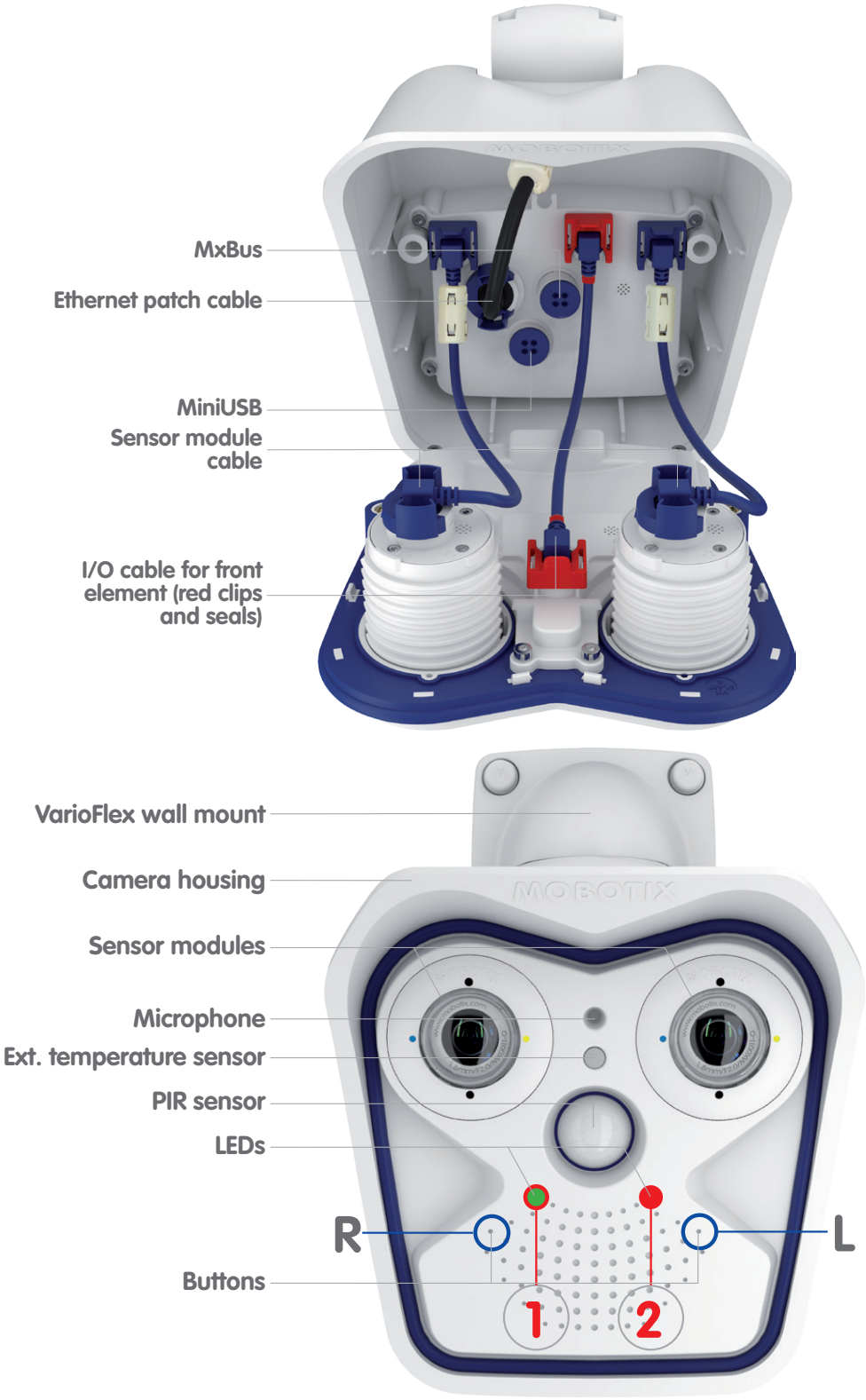

LED 1: Power (on), Error (flashes)
LED 2: Recording (flashes)

(M15D – Camera housing and connectors, excerpt from the technical documenation)

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Modular System For Maximum Flexibility.

The S15D and M15D IP video systems based on the modular MOBOTIX platform concept are equipped with a weatherproof camera core and separately available weatherproof sensor modules. This results in maximum flexibility for a wide range of applications as only a single camera platform is needed: video security applications in commercial, private and public sector environments, as surveillance or weather camera, webcam, indoors or outdoors, day or night.

The 5-megapixel sensor modules of the M15D and the S15D, equipped with microphone and LEDs, are identical and, if required, can be replaced using the special tools shipped with the system. The sensor modules are directly screwed into the camera housing (M15D) or are connected to the discreetly mounted camera housing using connection cables up to two meters in length (S15D). The camera software is preinstalled, so the cameras are ready for use without any additional configuration work required.

Overview: sensor modules for M15D and S15D

The portfolio offers six different focal lengths (lens image angle 13° to 180°) for the M15D and S15D – each as a day or night version. All sensor modules can be freely combined, allowing users to build a camera system ideally suited to any task at hand. Since MOBOTIX cameras are backlight-proof, none of these lenses requires a mechanical auto iris, thus making the camera extremely robust and maintenance-free.

- L12 Hemispheric with 180° image angle (horizontal)
- L25 Super Wide-Angle with 82° image angle (horizontal)
- L38 Wide-Angle with 54° image angle (horizontal)
- L51 Wide-Angle with 39° image angle (horizontal)
- L76 Telephoto with 27° image angle (horizontal)
- L160 Telephoto with 13° image angle (horizontal)

For more informations visit: www.mobotix.com > Products > AllroundDual M15